

ABSTRACT OF THE DISCLOSURE

5 A high pressure/vacuum piston pump has a reciprocating piston in a cylinder which has a small, preferably about 0.05 inches in diameter, leak opening allowing some of the working air to leak to the pump housing during at least a portion of the piston stroke. The leak opening is coplanar with the drive shaft and the centerline of the cylinder. It is also located to be between the piston head and the valve head for the majority of the piston stroke but below the piston cup seal and closed off from the working chamber when the piston is at top dead center. During transient off periods of the pump the leak path relieves high pressure or vacuum gas in the cylinder allowing a low-torque motor to restart the pump reliably.